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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
PIERLUIGI ORESTI, ET AL. : EXAMINER: SHUMATE, ANTHONY R.
SERIAL NO: 10/594,592 :
FILED: SEPTEMBER 28, 2006 : GROUP ART UNIT: 1775
FOR: A PROCESS FOR THE :
TREATMENT OF FLUIDS ORIGINATING
FROM SUBMARINE OIL FIELDS

REPLY BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

In reply to the Examiner's Answer of December 27, 2010, Applicants provide the present Reply Brief and comments.

Status of Claims begins on page 2 of this paper.

Grounds of Rejection to be Reviewed on Appeal begin on page 3 of this paper.

Remarks begin on page 4 of this paper.

STATUS OF THE CLAIMS

The status of the claims has changed since the previously filed Appeal Brief.

Claims 15-28 are presently active in this case. Claims 1-14 have been canceled.

Claims 15-28 are still rejected under 35 U.S.C. § 103(a) and are appealed. In view of the Examiner's Answer at page 2, however, claim 25 is no longer rejected under 35 U.S.C. § 112, ¶2 and 35 U.S.C. §101.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are unchanged from the previously filed Appeal Brief.

The first ground of rejection to be considered on appeal is whether Claims 15-26 and 28 are unpatentable over Sands et al. (U.S. 4,778,443) in view of Aarebrot et al. (WO 2000/011313), Holm (U.S. 3,075,918), and Lagrone (U.S. 4,339,917) under 35 U.S.C. § 103(a).

The second ground of rejection to be considered on appeal is whether claims 15-26 and 28 are unpatentable over Sands et al. in view of Aarebrot et al., Holm, Choi et al. (U.S. 6,537,349) and Lagrone as evidenced by Webb (U.S. 5,195,587) and Johnston (U.S. 4,967,559) under 35 U.S.C. § 103(a).

The third ground of rejection to be considered on appeal is whether claim 27 is unpatentable over Sands et al. in view of Aarebrot et al. and Lagrone under 35 U.S.C. § 103(a).

The fourth ground of rejection to be considered on appeal is whether claim 27 is unpatentable over Sands et al. in view of Aarebrot et al., Choi et al. (U.S. 6,537,349) and Lagrone as evidenced by Webb (U.S. 5,195,587) and Johnston (U.S. 4,967,559) under 35 U.S.C. § 103(a).

REMARKS

The previously filed Appeal Brief is believed to address the outstanding rejections in sufficient detail, but the Examiner's Answer of December 27, 2010, provides certain additional comments concerning the rejections not previously set forth which are addressed in the following remarks.

Throughout the Examiner's Answer, the Examiner disagreed with Applicants' arguments stating that (1) the March 3, 2010 rejection did not make a particular argument or use a reference as asserted by Applicants, (2) the claims do not recite a feature discussed in Applicants' argument, (3) Aarebrot et al. is not a base reference, and (4) that it is improper to attack the four cited references individually. See, e.g., pages 38, 39, 40, 41, 42, 43, 44, 46, 49, and 50. Applicants respectfully submit that these positions represent a fundamental misunderstanding of why Applicant is discussing portions of the cited references not relied upon by the Examiner relating to features not cited in the claims.

Two basic legal propositions underlie Applicants positions. First, as the caption of MPEP 2141.03, Section VI states, "Prior art must be considered in its entirety, including disclosures that teach away from the claims." Emphasis added. This MPEP section similarly states "A prior art reference must be considered in its entirety, i.e. as a whole, including portions that would lead away from the claimed invention." Emphasis in original, citing *W.L. Gore Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983). MPEP 2145 Section X.D.1 further cites authority explaining that a teaching away is one that criticizes, discredits, or otherwise discourages the solution claimed." *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). In addition, MPEP 2145 Section X.D.2 states "[i]t is improper to combine references where the references teach away from their combination." *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983).

Many of Applicants' positions stem from the concern that the pending rejections do not consider each reference in its entirety. Instead, when the references are considered in their entirety, they do not give a person of ordinary skill in the art sufficient reason to arrive at the claimed subject matter. Fully considering the references and the reasons it is inappropriate to combine them in this case means (1) considering unclaimed subject matter in the prior art, (2) considering parts of the references not relied on in the rejection, (3) considering the entire teachings of each reference and not just the base reference and (4) discussing aspects of the references in detail, which may have been misunderstood as treating them individually.

The second legal point is that "the proposed modifications may not render the prior art unsatisfactory for its intended purpose." MPEP 2143.01, section VI. Here, the MPEP states "[i]f proposed modification would render the prior art invention being modified unsatisfactory for the intended purposes, then there is no suggestion or motivation to make the proposed modification." *Id.* With respect to the second point, the principle is not stated as being limited to the ultimate base reference (here Sands et al.). Applicants submit that the logic should apply equally to intermediate references, especially Aarebrot et al., to the extent features of the intermediate references are further modified by additional references.

Turning to the references themselves, Sands et al. states that the invention provides two main advantages in gas/oil/water separation systems: "(i) that they will occupy considerably less space and will weigh much less than conventional systems, and (ii) that they are insensitive to motion." Col. 2, lines 25-33. Applicant's acknowledge Sands et al.'s invention is not limited to floating platforms, but submit that when the teaching of Sands et al. as a whole is considered, its objectives discourage the addition of further components that add weight and space to a system. While the Examiner notes (page 39) that Sands et al. discloses the possibility of reinjection (actually reinjecting water, see col. 6, lines 32-34) into

the producing formation, Sands et al. does not suggest adding a gas reinjection system or using the reinjection system to control formation pressure.

Aarebrot et al. is centrally relied on for its teaching of a gas reinjection system. Aarebrot et al. teaches reducing the discharge of environmentally harmful gasses, particularly CO₂ (e.g., Abstract, page 1). Accordingly, Applicants disagree with the Examiner's statement at page 43 that Appellant has failed to provide a showing that burning of gas or hydrocarbon (which inherently produces CO₂) is undesirable according to Aarebrot et al. In addition, Aarebrot et al. states that gas associated with oil recovery installations has been increasingly desired for commercial use which leaves less gas available for enhancing reservoir pressure. Page 1. Thus, Aarebrot et al. would not lead a person of skill in the art to find a third use for the gas by diverting gas to ejectors which would both (1) make less gas available commercially and (2) provide less gas for control of formation pressure.

Holm is relied on for its teaching of heating the hydrocarbon liquid because "it was known in the art that heating of petroleum oil (hydrocarbon liquid) provides the benefit of causing desired carbon dioxide to be desorbed from the petroleum oil to help in flashing off the carbon dioxide from the hydrocarbon oil." Page 5. However, this is inconsistent with the teaching of Aarebrot et al. which teaches reducing, not increasing, the amount of CO₂ being released into the air in order to avoid greenhouse gas emissions. Stated differently, Aarebrot et al. leads away from the heating as in Holm for the reasons relied on by the Examiner. The Examiner also states that because some CO₂ in Holm is injected into the reservoir, this is consistent with Aarebrot et al.'s teaching of reducing CO₂. Page 46. Here, the Examiner does acknowledge Aarebrot et al.'s teaching of CO₂ reduction. However, the Examiner fails to recognize that the Holm system for injecting CO₂ involves CO₂ flash valve 47 for example and still releases CO₂ into the atmosphere even aside from the initial burning in Holm line 3. Thus, Holm is still inconsistent with the environmental teaching of Aarebrot et al.

In addition, the Examiner relies on Holm as a second system for controlling formation pressure to increase production in addition to the system added by Aarebrot et al. Page 46. This logic suggests the addition of two entire systems to the base Sands et al. system (one from Holm and one from Aarebrot et al.) which serve the same purpose despite the fact that Sands et al. has as its no. 1 advantage “considerably” less space and weight on an oil facility.

Lagrone is relied on for the disclosure of an ejector. As already noted above, Aarebrot et al.’s teaching of the scarce nature of the natural gas associated with oil platforms would not lead a person of ordinary skill in the art to add an ejector of Lagrone. The Examiner suggests that because the ejector fluid would be recycled through an ejector of Lagrone it does not vitiate the goal of Aarebrot et al. Page 55. Applicants respectfully disagree and submit that the Examiner’s position does not recognize the fact that energy is lost as the gas is diverted through the ejector. Thus, while gas is recycled through the compressors, when the gas returns it has lost energetic pressure which means less pressure is available to maintain formation pressure as taught by Aarebrot et al.

The Examiner’s Answer continues to maintain that it is proper to combine Lagrone with the other references because Lagrone and claim 25 of the present invention relate to a fuel delivery system. Page 53. Applicants respectfully submit that this generalization paints with too broad a brush. Applicants invention relates to, e.g., “treatment of fluid from a submarine oil field” (claim 1). While claim 25 refers to the fact that process delivers a fuel gas, a person of ordinary skill in the art would understand that the delivered gas would still require further treatment and is not fuel for a high pressure gas turbine like a jet engine. On the other hand, Lagrone relates to delivering fuel to a high pressure gas turbine such as in jet engine. Obtaining raw fluid from a marine oil field and providing fuel for a high pressure turbine are quite unrelated fields of endeavor.

Finally, as previously summarized, none of the cited references disclose the claimed process of using “a compressed gas exiting from one of a plurality of compression stages of the reinjection gas compression unit as a driving fluid of each single ejector.” In particular, since the reinjection system relied upon by the Examiner comes from Aarebrot et al., and Aarebrot et al. already leads a person of ordinary skill in the art away from diverting the reinjection gas, it would not be obvious to divert compression gas to drive ejectors as claimed.

For the above reasons and the reasons submitted in the original Appeal Brief, Applicants again submits that the first through fourth grounds of rejection should be reversed.

Respectfully submitted,

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